BASIS FOR THE AMENDMENT

Claims 70-71 have been added as supported by the specification.

No new matter is believed to have been added by entry of this amendment. Entry and favorable reconsideration are respectfully requested.

Upon entry of this amendment Claims 1-16, 19, 20, 23-52, 56-71 will now be active in this application. Claims 34 and 69 stand withdrawn as being drawn to non-elected subject matter.

REMARKS

Applicants wish to thank Examiner Bruenjes for the helpful and courteous discussion with Applicants' Representative on April 27, 2006, during which proposed amendments were discussed. Claims 70 and 71 which require the presence of component (b) have been added.

The present invention as set forth in **Claim 1** relates to a layered composite, comprising the following layers:

(I) a layer I composition comprising:

(a) from 0 to 80 parts by weight of at least one polyamide selected from the group consisting of PA6, PA66, PA6/66 and mixtures thereof;

(b) from 0 to 100 parts by weight of at least one polyamine-polyamide copolymer comprising the following monomer units:

(α) from 0.5 to 25% by weight, based on the weight of the polyamine-polyamide copolymer, of at least one polyamine having at least 4 nitrogen atoms and having a number-average molar mass M_n of at least 146 g/mol, and

(β) at least one polyamide-forming monomer selected from the group consisting of lactam, ω-aminocarboxylic acid, equimolar combination of diamine and dicarboxylic acid, and mixtures thereof; and

(c) from 0 to 80 parts by weight of at least one polyamide selected from the group consisting of PA11, PA12, PA612, PA1012, PA1212 and mixtures thereof;

wherein, in said layer I, a total of the parts by weight of (a), (b) and (c) is 100;

wherein within an entirety of (a) and (b), at least 20 parts by weight of said entirety comprise monomer units selected from the group consisting of caprolactam, combination of hexamethylenediamine/adipic acid, and mixtures thereof; and

wherein within an entirety of (b) and (c), at least 20 parts by weight of said entirety comprise monomer units selected from the group consisting of ω-aminoundecanoic acid, laurolactam, combination of hexamethylenediamine/1,12-dodecanedioic acid, combination of 1,10-decanediamine/1,12-dodecanedioic acid, combination of 1,12-dodecanediamine/1,12-dodecanedioic acid, and mixtures thereof; and

(II) a layer II composition comprising at least one ethylene-vinyl alcohol copolymer;

wherein

the composite comprises the following sequence of layers:

(i) a layer comprising at least one member selected from the group consisting of PA11, PA12, PA612, PA1012, PA1212, and combinations thereof;

(ii) layer I;

(iii) layer II; and

(iv) a layer comprising at least one member selected from the group consisting of PA6, PA66, PA6/66, and combinations thereof.

The present invention as set forth in **Claim 37** relates to a layered composite, comprising the following layers:

(I) a layer I composition comprising:

(a) from 0 to 80 parts by weight of at least one polyamide selected from the group consisting of PA6, PA66, PA6/66 and mixtures thereof;

(b) from 0 to 100 parts by weight of at least one polyamine-polyamide copolymer comprising the following monomer units:

(α) from 0.5 to 25% by weight, based on the weight of the polyamine-polyamide copolymer, of at least one polyamine having at least 4 nitrogen atoms and having a number-average molar mass M_n of at least 146 g/mol, and

(β) at least one polyamide-forming monomer selected from the group consisting of lactam, ω-aminocarboxylic acid, equimolar combination of diamine and dicarboxylic acid, and mixtures thereof; and

(c) from 0 to 80 parts by weight of at least one polyamide selected from the group consisting of PA11, PA12, PA612, PA1012, PA1212 and mixtures thereof;

wherein, in said layer I, a total of the parts by weight of (a), (b) and (c) is 100;

wherein within an entirety of (a) and (b), at least 20 parts by weight of said entirety comprise monomer units selected from the group consisting of caprolactam, combination of hexamethylenediamine/adipic acid, and mixtures thereof; and

wherein within an entirety of (b) and (c), at least 20 parts by weight of said entirety comprise monomer units selected from the group consisting of ω-aminoundecanoic acid, laurolactam, combination of hexamethylenediamine/1,12-dodecanedioic acid, combination of 1,10-decanediamine/1,12-dodecanedioic acid, combination of 1,12-dodecanediamine/1,12-dodecanedioic acid, and mixtures thereof; and

(II) a layer II composition comprising at least one ethylene-vinyl alcohol copolymer;

wherein the composite comprises a layer sequence I/II/I; and

wherein said composite further comprises at least one layer comprising at least one member selected from the group consisting of PA11, PA12, PA612, PA1012, PA1212, and combinations thereof.

Siour et al, Nohara et al, Borggreve et al, Mitchell et al, and Kitami et al, alone or in combination fail to disclose or suggest the claimed composites.

Siour et al fail to disclose what kind of binder might be suitable for adhesively connecting a layer made of PA11, PA12, PA612, PA1012 or PA1212 with an EVOH layer. As the vast majority of polymers is incompatible, the selection of an adhesive is not trivial.

Nohara et al cannot be combined with Siour et al because they disclose another kind of laminate. Nohara et al does not deal with adhesively connecting a PA layer and an EVOH layer. Nohara et al disclose how to connect a polyester layer with an EVOH layer (column 2, lines 30-36). A polyester is completely different from a PA12, for instance. It is very improbable that an adhesive which is suitable for polyester adheres well on PA12, too, due to different polarity, different kind of end groups, different molecular structure etc.

Nohara et al teach away from the present invention.

The layer I according to the claims contains, leaving aside the optional component (b), one or more polyamides which ordinarily are homopolyamides. In the absence of (b) the composition of the layer I is a blend of two different polyamides (e. g. PA6 and PA12).

Nohara et al, however, prefers to use a copolyamide. The copolyamides are listed from column 3, line 49 to column 4, line 21. The Examiner misinterprets column 4, lines 11 – 13 because a caprolactam/lauryllactam copolymer is a copolymer and not a blend of PA6 and PA12. The properties of a copolymer are completely different from those of a blend of the two corresponding homopolymers.

In column 4, lines 22 – 28, suitable blends of homopolyamides are disclosed, specifically a blend of polycaprolactam (PA6) and polyhexamethyleneadipamide (PA66) and a blend of polycaprolactam (PA6) and a caprolactam/hexam ethylene diammonium adipate copolymer (PA6/66).

Nohara et al then states that "a copolymer nylon of nylon 6 and nylon 6,6 is especially suitable for attaining the objects of the present invention" (column 4, lines 55 – 57).

In column 5, lines 40 – 45 it is outlined that in case of ordinary polyamide adhesives the bonding force to the polyester layer is relatively weak. However, in case of a nylon 6/nylon 6,6 copolymer, the bonding force to the polyester layer is strong.

This is not helpful for one skilled in the art who is looking for an adhesive to combine PA12 and EVOH layers. As said above, PA12 is completely different from a polyester. If the person skilled in the art, however, would have decided not to take into account the substantial differences between these polymers, he would have tried a nylon 6/nylon 6,6 copolymer which would have resulted in virtually no adhesion to the PA12 (or PA11 etc.) layer. There is nothing in Nohara et al which might suggest to add PA12 or one of the other members of this group. It was not trivial to add e. g. PA12 because it was known that PA12 does not adhere on EVOH; so the adhesion to the EVOH layer should be impaired. **Example 2 of the present invention**, however, shows that even with substantial amounts of PA12 added the adhesion to both layers is excellent.

Regarding Borggreve et al the Examiner is of the opinion that this component would be easier to extrude. However, the opposite is true.

For extrusion a high melt stiffness and therefore a high melt viscosity is needed. In the product range of a polyamide the extrusion grades are always those of the highest molecular weight. A low melt viscosity is needed for injection molding, especially for producing thin-walled parts. Consequently there is no suggestion in Borggreve et al that these products might be extrudable. Processing is mentioned only in Example 1 where test bars are **injection molded.**

Contrary to the Examiner's opinion the component (b) is added not to lower the viscosity (which would be in fact detrimental for extrusion) but to increase the compatibility of the components a) and c) (page 11, lines 5 and 6 of the specification).

The component (b) may also be the sole component if it has the composition as claimed. Even in this case the adhesion to both adjacent layers is excellent. The inherent low melt viscosity is a drawback, Applicants disclosed how to increase the molecular weight for better suitability for extrusion (page 15, lines 1 – 10 of the specification).

Mitchell et al fail to disclose or suggest a composite as claimed having a layer sequence I/II/I; and wherein said composite **further comprises** at least one layer comprising at least one member selected from the group consisting of PA11, PA12, PA612, PA1012, PA1212, and combinations thereof.

In addition, Applicants wish to draw the Examiner's attention to the Examples starting at page 19 of the specification. Examples 1 and 2 according to the present invention, show permanent adhesion at all of the phase boundaries, while Comparative Examples 1 and 2 show that there is no adhesion between the outer and middle layer when one layer is omitted. Thus, the claimed composite exhibits superior properties which are not disclosed or suggested by Mitchell et al.

Kitami et al does not cure the defects of Siour et al, Nohara et al, Borggreve et al, and Mitchell et al.

Siour et al, Nohara et al, Borggreve et al, Mitchell et al, and Kitami et al, alone or in combination fail to disclose or suggest the claimed composites.

Therefore, the rejections of the claims under 35 U.S.C. § 103(a) over Siour et al, Nohara et al, Borggreve et al, Mitchell et al, and Kitami et al are believed to be unsustainable as the present invention is neither anticipated nor obvious and withdrawal of these rejections is respectfully requested.

This application presents allowable subject matter, and the Examiner is kindly requested to pass it to issue. Should the Examiner have any questions regarding the claims or otherwise wish to discuss this case, he is kindly invited to contact Applicants' below-signed representative, who would be happy to provide any assistance deemed necessary in speeding this application to allowance.

Respectfully submitted,

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